REMARKS

Upon entry of the present amendment, claims 1-37 will remain pending in this application. Claims 15-24 and 34-37 have been withdrawn from consideration. Claims 1-14 and 25-33 remain under consideration. Applicant respectfully submits that no new matter is added by the present amendment. For example, the subject matter added to claims 1, 14, 25, and 26 is supported in the Specification at least at paragraphs [0045] and [0053] and in the Drawings at least at Figure 7 (steps 712, 720).

The Specification stands objected to. Claims 1-14 stand rejected under 35 U.S.C. § 112 as being allegedly indefinite. Claims 1, 14, and 26 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by Netz, OLAP Services: Semiadditive Measures and Inventory Snapshots (1999) ("Netz"). Claims 1-14 and 25-33 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Kimball et al., The Data Warehouse Toolkit: The Complete Guide to Dimensional Modeling (2002) ("Kimball et al.") in view of U.S. Patent No. 6,161,103 ("Rauer et al.").

Interview Summary

Applicant's representatives, Mr. Kenneth Eiferman and Mr. Allen Oh, and Examiner Scott L. Jarrett participated in a telephonic interview on November 2, 2009, to discuss the claim amendments herein. Examiner Jarrett agreed to reevaluate the current rejections in view of the claim amendments herein.

Objections to the Specification

The Specification stands objected to. In particular, it is asserted that the title of the invention is not descriptive. Applicant has amended the title of the invention to more clearly indicate the invention to which the claims are directed.

In view of the above, Applicant respectfully requests that the objection to the Specification be reconsidered and withdrawn.

Claim Rejections Under 35 U.S.C. § 112

Claims 1-14 stand rejected under 35 U.S.C. § 112 as being allegedly indefinite for failing to particularly point out and distinctly claim the subject matter that is regarded as the invention. In particular, it is alleged that there is insufficient antecedent basis for the limitation "evaluating **the** parent member" in claims 1 and 14.

Applicant has amended claims 1 and 14 to replace the first reference in each claim to "the parent member" with "a parent member." Accordingly, Applicant respectfully submits that claims 1 and 14 now contain sufficient antecedent basis for the limitation "the parent member" and that any indefiniteness that may have existed in claims 1 and 14 has been cured by the above amendments. Claims 2-13 depend from claim 1 and are also no longer indefinite.

In view of these amendments and remarks, Applicant respectfully requests that the rejection of claims 1-14 under 35 U.S.C. § 112 be reconsidered and withdrawn.

Claim Rejections Under 35 U.S.C. § 102(b)

Claims 1, 14, and 26 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by Netz, OLAP Services: Semiadditive Measures and Inventory Snapshots (1999) ("Netz").

Regarding claims 1, 14, and 26, Applicant understands the rejection to be based in part on the premise that Netz discloses the limitations "in a computing device, evaluating a parent member for a first account . . . by aggregating the first members according to a first aggregation function;" and "in the computing device, evaluating the parent member for a second account . . . by aggregating the second members according to a second aggregation function that is different from the first aggregation function" at page 2, paragraphs 4-5, and 8. In particular, Netz is understood as being cited as teaching evaluating a parent member for the first account by aggregating the first members according to a first aggregation function (sum, average, quantity, value, average over time, *etc.*) and evaluating the parent member for a second account by aggregating the second members according to a different aggregation function.

Applicant respectfully traverses the rejection. Netz discloses semiadditive measures that "are additive on some . . . dimensions and not on other dimensions" and discusses the inventory problem. Pages 3 *et seq.* disclose various non-additive aggregation functions,

including average over time, opening and closing balances, consecutive and parallel period comparisons, minimum and maximum values in a time span, and relative contributions to a total value. However, while Netz may disclose applying different aggregation functions to different dimensions of an inventory cube, Applicant's review of Netz suggests that Netz is silent as to the application of different aggregation functions to subsets of members **within a single non-additive dimension**, as recited in claims 1, 14, and 26.

By contrast, claim 1, for example, recites the limitations "in a computing device, evaluating a parent member for a **first account comprising a plurality of first members of the non-additive account dimension** by aggregating the first members according to a first aggregation function" and "in the computing device, evaluating the parent member for a **second account comprising a plurality of second members of the non-additive account dimension** by aggregating the second members according to a second aggregation function that is different from the first aggregation function" (emphasis added). The phrase "a second account comprising a plurality of second members of **the** non-additive account dimension" requires that the first and second accounts be taken from the same non-additive dimension.

Accordingly, Applicant respectfully submits that Netz fails to disclose at least the limitation "in the computing device, evaluating the parent member for a second account comprising a plurality of second members of the non-additive account dimension by aggregating the second members according to a second aggregation function that is different from the first aggregation function" of claim 1 and thus does not anticipate claim 1.

Further, claim 1 has been amended to recite that the first and second aggregation functions aggregate data from first and second data tables, respectively. This limitation is supported in the Specification at least at paragraphs [0038] and [0040]-[0041] and in the drawings at least at Figures 3-4, which show two exemplary data tables for Accounts A and B, respectively. Figure 6 shows a cross section that contains the aggregated data for Accounts A and B, *i.e.*, aggregated data from the first and second data tables of claim 1, presented in a combined form, as recited in the step "outputting the evaluated parent member for the first and second accounts." By contrast, it is not seen where Netz discloses this type of combining of aggregated data from different data tables.

Claims 14 and 26 contain similar limitations to claim 1 in this regard and are thus also not anticipated by Netz.

Based at least on the above remarks, Applicant respectfully submits that claims 1, 14, and 26 are patentable over the prior art of record and requests reconsideration and removal of the rejections under 35 U.S.C. § 102(b).

An issue of public use or on sale activity has been raised in this application. The Office has requested additional information regarding this issue. Applicant respectfully submits the following information in response to the Office's inquiries (the Office's inquiries are reproduced below in *italics*; Applicant's responses immediately follow each such inquiry):

> *Please provide the citation and a copy of each publication which any of the applicants authored or co-authored and which describe the disclosed subject matter of aggregating a measure over a non-additive or semi-additive dimension.*
>
> Applicants are unable to provide any such publications at this time. However, Applicants are presently in the process of examining their records and will provide an update as this information becomes available.

> *Please provide the citation and a copy of each publication that any of the applicants relied upon to draft the claimed subject matter. For each publication, please provide a concise explanation of the reliance placed on that publication in distinguishing the claimed subject matter from the prior art.*
>
> No publications were relied upon in the drafting of the claimed subject matter. A. Netz, "OLAP Services: Semiadditive Measures and Inventory Snapshots" (1999) was used for background purposes only. A copy of this publication was provided previously.

Please provide the names of any products or services that have incorporated the claimed subject matter. Specifically please provide documentation (help files, manuals, articles, presentations, training, etc.*) which disclose Microsoft's OLAP Services as part of the Microsoft SQL Server 7.0 or any product version in use or for public sale prior to the submission of the instant application disclosing aggregating a measure over a non-additive or semi-additive dimension and/or aggregating measures comprising an account dimension.*

Applicants believe that the first product to incorporate the claimed subject matter was Microsoft SQL Server 2005. Two articles which describe the claimed subject matter within Microsoft SQL Server 2005 are attached to this amendment: "Defining Semiadditive Behavior" [http://msdn.microsoft.com/en-us/library/ms175356(SQL.90).aspx] and "Define Semiadditive Behavior (Business Intelligence Wizard) (SSAS)" {http://msdn.microsoft.com/en-us/library/ms189734(SQL.90).aspx]. Applicants are presently in the process of examining their records to determine additional relevant products and documentation and will provide an update as this information becomes available.

Please state the specific improvements of the claimed subject matter in claims [sic] *the disclosed prior art and indicate the specific elements in the claimed subject matter that provide those improvements.*

Claims 1, 14, and 26 recite at least two potential improvements that are believed not to be disclosed by Netz: (1) the ability to define multiple accounts within a single non-additive or semi-additive dimension and to associate each account with a respective aggregating measure; and (2) the ability to define these accounts using a graphical user interface.

Claim 1, for example, recites the limitations "in a computing device, evaluating a parent member for a first account comprising a plurality of first members of the non-additive account dimension by aggregating the first members according to a first aggregation function selected using a first user-selectable element of the user interface and aggregating first data from a first data table;" and "in the computing device, evaluating the parent member for a second account comprising a plurality of second members of **the** non-additive account dimension by aggregating the second members according to a second aggregation function that is different from the first aggregation function, the second aggregation function being selected using a second user-selectable element of the user interface and aggregating second data from a second data table" (emphasis added). The phrase "a second account comprising a plurality of second members of **the** non-additive account dimension" requires that the second account comprise members of the same non-additive account dimension to which the members of the first account belong. Accordingly, this phrase requires that the different aggregation functions apply to different members **of the same non-additive account dimension**.

By contrast, while Netz discloses a number of non-additive aggregation functions, Netz appears to be silent regarding applying different non-additive aggregation functions to different members of a single non-additive account dimension. Further, as disclosed at paragraph [0009] of the instant Specification, "a drawback of user-defined aggregation is that it requires a proficiency in a proprietary or standard language to define logic for aggregating a non-additive dimension. Another drawback is that logic must be defined separately for each non-additive dimension, which may be particularly tedious and time consuming for a cube that includes a number of non-additive dimensions." Pages 3 *et seq.* of Netz disclose a number of code examples for implementing non-additive aggregation functions, but these examples require proficiency in a language, *e.g.*, multidimensional expressions (MDX) language, to implement effectively.

Further, as discussed above, claims 1, 14, and 26 recite a potential improvement in that data from different data tables may be aggregated and combined

into a cross section of an analytical data service cube, such as the cross section 600 of Figure 6.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1-14 and 25-33 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Kimball et al., The Data Warehouse Toolkit: The Complete Guide to Dimensional Modeling (2002) ("Kimball et al.") in view of U.S. Patent No. 6,161,103 ("Rauer et al.").

As per claims 1, 14, and 26, the rejection is understood to be based in part on the premise that Kimball et al. discloses evaluating a parent member for first/second accounts comprising a plurality of first members of the non-additive dimension of a cube by aggregating the first members according to first/second aggregation functions (*e.g.*, counts, averages), wherein the first/second aggregation functions are different. The last two paragraphs of page 37, the first paragraph of page 38, the last two paragraphs of page 71, the first paragraph of page 72, and the Banking Case Study at page 200 are cited as disclosing this limitation.

Applicant respectfully traverses the rejection. While Kimball et al. discloses non-additive facts, such as gross margins, percentages, ratios (see page 37, last two paragraphs), and unit prices (see page 38, first paragraph), and semi-additive facts, such as inventory levels and other forms of financial account balances (see page 71, last two paragraphs), Kimball et al., like Netz, does not appear to disclose aggregating different members of the same non-additive or semi-additive dimension using different aggregation functions. As discussed above in connection with the Netz reference, claim 1 requires that that the second account comprise members of the same non-additive account dimension to which the members of the first account belong and, thus, that the different aggregation functions apply to different members of the same non-additive account dimension.

Further, Kimball et al. does not appear to disclose a user interface for selecting these different aggregation functions to be applied to the first and second accounts within the non-additive account dimension.

Accordingly, Applicant respectfully submits that Kimball et al. fails to disclose at least the limitation "in the computing device, evaluating the parent member for a second

account comprising a plurality of second members of the non-additive account dimension by aggregating the second members according to a second aggregation function that is different from the first aggregation function, the second aggregation function being selected using a second user-selectable element of the user interface and aggregating second data of a second data table" of claim 1.

In addition, as discussed above, claim 1 has been amended to recite that the first and second aggregation functions aggregate data from first and second data tables, respectively. By contrast, it is not seen where Kimball et al. discloses this type of combining of aggregated data from different data tables.

Rauer et al. is cited as disclosing a processor, memory, relational data source, analytical data service, and a reporting client in communication with the processor. However, Rauer et al. is not believed to disclose the other limitations of claim 1, whether considered individually or in combination with Kimball et al.

Based at least on the above amendments and remarks, Applicant submits that claim 1 is patentable over Kimball et al. in view of Rauer et al. Claims 2-13 depend from claim 1 and are also patentable over Kimball et al. in view of Rauer et al. at least by reason of their dependency from claim 1.

Claim 14 also contains the limitation "evaluating the parent member for a second account comprising a plurality of second members of the non-additive account dimension by aggregating the second members according to a second aggregation function that is different from the first aggregation function, the second aggregation function being selected using a second user-selectable element of the user interface and aggregating second data from a second data table" and is also patentable over Kimball et al. in view of Rauer et al. for at least the same reasons as claim 1. Similarly, claim 26, which contains the limitation "wherein the analytical data service includes a mechanism for aggregating a measure over a non-additive account dimension of a cube, said mechanism comprising means for evaluating a parent member for a first account comprising a plurality of first members of the non-additive account dimension by aggregating the first members according to a first aggregation function selected using a first user-selectable element of the user interface and aggregating first data from a first data table, and means for evaluating the parent member for a second account comprising a plurality of second members of the non-additive account dimension by

aggregating the second members according to a second aggregation function that is different from the first aggregation function, the second aggregation function being selected using a second user-selectable element of the user interface and aggregating second data from a second data table," is also patentable over Kimball et al. in view of Rauer et al. Claims 27-33 depend from claim 26 and are also patentable over Kimball et al. in view of Rauer et al. at least by reason of their dependency from claim 26.

Claim 25 recites the limitations:

"defining, based on the selected first user-selectable elements, a first account comprising a plurality of first members of the non-additive dimension and a second account comprising a plurality of second members of the non-additive dimension, the non-additive dimension having a parent member that includes at least one child member selected from the first members and the second members;"

"providing a second interface comprising a plurality of second user-selectable elements, each second user-selectable element associated with a respective non-additive aggregation function;"

"for each of the first and second accounts, receiving a user selection of one of the second user-selectable elements;"

By contrast, while Rauer et al. discloses an aggregate builder at Figure 28, it does not appear that the aggregate builder shown in Figure 28 provides the capability to define "a first account comprising a plurality of first members of the non-additive dimension" and "a second account comprising a plurality of second members of the non-additive dimension" and "for each of the first and second accounts, [receive] a user selection of one of the second user-selectable elements" associated with respective non-additive aggregation functions. That is, Rauer et al. does not appear to allow the user to define multiple accounts within a single non-additive dimension and then to associate each such account with a different non-additive aggregation function.

Claim 25 recites the further limitation "evaluating the parent member by aggregating the first members according to the non-additive aggregation function associated with the first account and by aggregating the second members according to the non-additive aggregation function associated with the second account." As discussed above in connection with claims 1, 14, and 26, neither Kimball et al. nor Rauer et al. provides the capability to aggregate

different members **of the same non-additive account dimension** using different aggregation functions.

For at least these reasons, Applicant submits that claim 25 is patentable over Kimball et al. in view of Rauer et al.

Based at least on the above remarks, Applicant respectfully submits that the currently pending claims are patentable over the prior art of record and requests reconsideration and removal of the rejections under 35 U.S.C. § 103(a).

CONCLUSION

In view of the above amendments and remarks, Applicant respectfully submits that the present application is in condition for allowance. Reconsideration of the application is respectfully requested.

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